POSTTRAUMATIC STRESS DISORDER

A Behavioral Approach to Assessment and Treatment

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ALLYN AND BACON
Boston London Toronto Sydney Tokyo Singapore

A Division of Simon & Schuster, Inc.
160 Gould Street
Needham Heights, MA 02194

Printed in the United States of America

10 9 8 7 6 5 4 3 2 96 95 94 93 92

ISBN 0-205-14553-7

Library of Congress Catologing-in-Publication Data

Posttraumatic stress disorder : a behavioral approach to assessment and treatment / edited by Philip A. Saigh.
p. cm. -- (Psychology practioner guidebooks)
Includes indexes.
1. Post-traumatic stress disorder. 2. Behavior therapy.
3. Cognitive therapy. I. Saigh, Philip A. II. Series.
[DNLM: 1. Behavioral Therapy. 2. Stress Disorders, Post -Traumatic. WM 170 P857]
RC552.P67P6678 1991
616.85'21--dc20
DNLM/DCL
for Library of Congress

91-1953
CIP

Chapter 5

Behavioral Treatment of Posttraumatic Stress Disorder and Co-occurring Substance Abuse

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As the preceding chapters show, our understanding of the phenomenology, prevalence, etiology, and assessment of posttraumatic stress disorder (PTSD) has increased substantially over the past decade. The research findings and clinical observations discussed in these chapters have repeatedly demonstrated that PTSD is a complex disorder that is multiply determined and expressed.

PTSD is increasingly recognized as co-occurring with other major psychological disorders and psychosocial problems. PTSD has been found to be highly comorbid with alcohol abuse and dependence (Keane & Wolfe, 1990; Kulka, Schlenger, Fairbank, Hough, Jordan, Marmar, & Weiss, 1990); affective disorders such as major depressive disorder (Green, Lindy, Grace, & Gleser, 1989); anxiety disorders such as generalized anxiety disorder (Kulka et al., 1990) and panic disorder (Green et al., 1989); somatization disorder (Toland & Goetz, 1988); and Axis II disorders such as antisocial personality disorder (Kulka et al., 1990; Sierles, Chen, Messing, Besyner, & Taylor, 1986).

Not surprisingly, the combination of PTSD and substance abuse or other major psychological problems is reported to be quite difficult to treat (Boudewyns, 1989; Scurfield, 1991). The development of ecologically valid

treatment protocols for multiply disordered PTSD patients is a major challenge facing those who provide clinical services to trauma survivors. Unfortunately, little information exists to guide the clinician in the development of potentially efficacious interventions for multiply disordered PTSD patients. The purpose of this chapter is to attempt to provide some heuristic guidelines for treating PTSD, and one of the most prevalent and challenging comorbidities, substance abuse.

We will begin the present chapter with an overview of recent research findings that highlight what we currently know about the relationship between PTSD and substance abuse. This overview will be followed by our rationale for advocating the development and refinement of comprehensive interventions for PTSD and substance abuse comorbidities.

A major focus of the chapter will be to describe in detail a specific model for treating PTSD and substance abuse that takes into account our current state of knowledge about this complex comorbidity. The treatment strategy that we will describe consists of five sequential phases or stages: (a) precommitment; (b) commitment phase; (c) action phase 1: acquisition and practice; (d) action phase 2: generalization and maintenance; and (e) the relapse phase. A brief description of the rationale and empirical support for each stage of this intervention model will be included in this section of the chapter. Detailed information on specific treatment components that should be considered at each stage of the intervention will follow in separate sections. The chapter will conclude with a discussion of the need for research that describes the process by which treatment of PTSD substance abuse patients takes place, as well as studies that examine the outcome efficacy of such interventions.

PREVALENCE OF PTSD AND CO-OCCURRING SUBSTANCE ABUSE

There is now substantial evidence to suggest that many people with PTSD also suffer alcohol or drug abuse and dependence (Davidson, Kudler, Saunders, & Smith, 1990; Friedman, in press; Green, Lindy, Grace, & Gleser, 1989; Keane, Gerardi, Lyons, & Wolfe, 1988; Keane & Wolfe, in press; Kilpatrick, 1990; Kulka et al., 1990; McFarland, 1985; Sierles, Chen, McFarland, & Taylor, 1983; Sierles, Chen, Messing, Besyner, & Taylor, 1986). For example, among the nationally representative, community-based sample of more than 1,600 Vietnam veterans who participated in the National Vietnam Veterans Readjustment Study (NVVRS), nearly a quarter of the men with current PTSD also met DSM-III-R criteria for current alcohol abuse or dependence (Kulka et al., 1990). In comparison, among

male Vietnam veterans without PTSD, fewer than 10% met criteria for current abuse of or dependence on alcohol. Thus, male Vietnam veterans with a current diagnosis of PTSD were found to be more than twice as likely to meet criteria for current alcohol abuse or dependence as their counterparts without PTSD. Among Vietnam veteran women with current PTSD, roughly 10% were found to meet criteria for current alcohol abuse or dependence. In contrast, less than 2% of Vietnam veteran women without PTSD met criteria for alcohol abuse or dependence. Thus, among female Vietnam veterans, having a current diagnosis of PTSD predicts a greater-than-fivefold increase in the likelihood that alcohol abuse or dependence is a current problem.

Regarding current drug abuse or dependence among people with PTSD, several findings from the NVVRS are relevant. For men, more than 1 in 20 veterans with PTSD were found to have a serious current problem with drug abuse or dependence. In comparison, less than 1 in 100 Vietnam veteran males who do not have PTSD have a current diagnosis of drug abuse or dependence.

As one might expect, lifetime rates of alcohol and drug abuse among people with current PTSD are even higher. In the NVVRS, nearly three-quarters of the men with a current diagnosis of PTSD met criteria for a lifetime diagnosis of alcohol abuse or dependence ("lifetime" diagnosis of substance abuse was operationally defined as "ever" having met criteria for substance abuse or dependence at any time during the course of one's life). Among women with current PTSD, nearly 3 in 10 have met criteria for alcohol abuse in their lifetime. Regarding the lifetime prevalence of PTSD and co-occurring drug abuse or dependence, roughly 10% of men and women met diagnostic criteria. Compared to Vietnam veterans without PTSD, veterans with PTSD have lifetime rates of alcohol and drug abuse and dependence that are significantly higher.

In addition to combat-related PTSD, PTSD that results from exposure to other types of extreme events is associated with high rates of co-occurring substance abuse. For example, among 2,009 women who participated in a national epidemiological study of the psychological impact of violent crime, crime victims with PTSD were found to be at increased risk for co-occurring substance abuse problems (Kilpatrick, 1990). Specifically, crime victims with PTSD were 3.2 times more likely than crime victims without PTSD to have had serious problems with alcohol and 3.4 times more likely to have had a serious problem with drugs.

Among treatment-seeking populations, the prevalence of dual PTSD and substance abuse disorders is generally found to be higher than in the community-based samples (Davidson et al., 1990; Keane & Wolfe, 1990; McFarland, 1985; Sierles et al., 1986). For example, Keane and Wolfe (1990) reported that 84% of 50 patients who sought treatment at the

Boston Veterans Administration Medical Center for PTSD had at least one substance abuse problem: 70% met criteria for alcohol abuse or dependence, while 42% met criteria for drug abuse or dependence.

CHALLENGE OF TREATING THE PTSD SUBSTANCE ABUSER

A major challenge in treating the PTSD substance abuser is the development of an individual treatment plan that adequately addresses the array of problems associated with this complex comorbidity. At least three different general treatment goals usually should be considered in addressing the problems of PTSD substance abusers. One treatment goal is to attempt to decrease positive symptoms of PTSD, such as anxiety, arousal, intrusive recollections of extreme events, anger, and hostility. A second goal is to attempt to increase approach behavior to counteract negative symptoms associated with both PTSD and substance abuse, such as interpersonal withdrawal and flattened emotional reactivity. A third general goal is to attempt to decrease the frequency of an appetitive addictive behavior. Clearly, the task of devising interventions to address all three goals concurrently or sequentially represents a major challenge for treatment providers.

Additional reasons why treatment of the PTSD substance abuse patient is challenging include the following: (a) many PTSD substance abuse patients continue active alcohol or drug abuse during treatment; (b) alcohol or drug dependence comorbidities are associated with treatment noncompliance; and (c) therapists often report that they feel overwhelmed by the chronic and recalcitrant problems of the PTSD substance abuser (cf. Lyons & McGovern, 1989).

Conceptual Model for Treating the PTSD Substance Abuser

This section is designed to elaborate upon an integrative model for conceptualization of the interaction between PTSD and substance abuse and dependence, with an emphasis on the most prevalent comorbid addiction, alcoholism. The aim of this model is threefold: (a) to account for the complexity of alcohol-anxiety (and PTSD) interactions, from both an etiological as well as a maintenance perspective; (b) to provide a logical foundation for generating clinical interventions; and (c) to articulate components of a model that can generate testable hypotheses for clinical and field research in comorbid PTSD. We hope to cast a broad conceptual net in reviewing relevant work to provide a logical springboard for a rather novel multidimensional behavioral approach. Although this model was devel-

oped largely through work with patients with combat-related PTSD, it should, in general, serve as a useful heuristic for treatment of PTSD resulting from exposure to other types of extreme events.

Rationale for Model Development

Several practical, theoretical, and more speculative treatment considerations have led to the need for an integrative model for understanding the sequelae to trauma and the addictions. PTSD is a relatively new addition to the clinical taxonomy of psychiatric disorders (American Psychiatric Association, 1980), and most empirically based information about the disorder has been collected only in the last few years. It is therefore not surprising that many clinicians who have been treating individuals with PTSD often have had little exposure to this increasingly sophisticated knowledge base and are unaware of the complex nature of the disorder. Of particular concern is that little attention is typically paid in clinical practice to developing treatment plans and interventions that consider how to treat PTSD that is comorbid with other serious problems such as alcohol and drug abuse, major depression, and antisocial or borderline personality disorders. This issue raises important questions about the type and focus of treatment and whether various combinations of PTSD and other disorders provide differential information about matching clients to treatment and prognosis. What is now needed is the development of behavioral approaches to treating PTSD that are commensurate with our current level of understanding regarding the complexity of the disorder.

We will consider four substantive arguments for the careful joint consideration of PTSD and alcoholism. The first argument accounts for the interaction of the disorders. Here, we will discuss studies that have relevance for the influence of one disorder upon the other, in a causal or directional fashion. The second argument involves the respective impairment of individuals with PTSD and substance abuse. This discussion will review symptom constellations that are common to both alcoholism and PTSD and the recalcitrance of the chronic forms of these disorders. The third argument—relapse rates—is based upon extensive addiction literature and growing PTSD literature regarding relapse rates posttreatment. The fourth and final argument is one of cost effectiveness. This rationale is based solely on the logic that combined, better conceived interventions are less costly and more likely to provide a complete continuum of care.

Interaction Argument. Currently we know little about the directionality of the etiological relationship between PTSD and substance abuse and dependence. We have yet to determine whether PTSD is a risk factor for alcohol or drug abuse, or whether substance abuse operates as a risk factor for the

development of PTSD. Recently, Davidson et al. (1990) have reported some preliminary data regarding the sequencing and course of alcoholism with PTSD. These investigators administered the Schedule of Affective Disorders (SADS-L; Endicott & Spitzer, 1978) to a sample of 44 World War II and Vietnam veterans with PTSD to establish (a) age at first diagnosis of alcoholism and other psychiatric disorders; (b) age at onset of PTSD; and (c) chronology and number of other diagnoses. Alcoholism was found to precede the onset of PTSD by a mean of 3.1 years among Vietnam veterans but follow PTSD by a mean of 6.9 years in WWII veterans. As noted by the authors, the finding that alcohol abuse or dependence preceded or occurred at the same time as PTSD in most Vietnam veterans does not indicate causality. Alcohol abuse still may have represented an attempt to cope with significant early PTSD symptoms before the emergence of the full disorder.

Khantzian (1985) has proposed a self-medication theory of substance abuse, suggesting that drugs of abuse are selected because of their specific psychotropic effects. Heroin, for example, may be chosen for its powerful muting effect on rage and aggression, while cocaine may be adopted for its antidepressant action. Neff and Husiani's (1982) study of the "stress-buffering" function of alcohol consumption suggested that drinking is a mediating factor in the relationship between certain life events and depressive symptomatology, particularly in response to extreme ("calamitous") events.

A growing body of literature has begun to point toward the insidious manner in which the urge or craving to drink may be precipitated by PTSD symptomatology (Keane et al., 1988; Jellinek & Williams, 1984, 1987). Although the tension-reduction hypothesis has received mixed support in the alcohol and anxiety literature, there is clinical consensus that a proportion of PTSD patients self-medicate their anxiety in the absence of other, more adaptive ways of coping. Brinson and Treanor (1988) have concluded that individuals with PTSD abuse alcohol to dampen adverse emotional reactivity, cope with sleep disturbance, and escape intrusive PTSD reexperiencing phenomena.

Initial associations between extreme stress and drinking can contribute to later vulnerability to multiple diagnosis through changes in expectancies about the effects of alcohol (cf. Brown, Goldman, Inn, & Anderson, 1980; Brown, Goldman, & Christiansen, 1985). One study directly asked dually diagnosed patients what led to their last return to drinking (Abueg, Chun, & Lurie, 1990). These PTSD alcoholics reported many of the relapse precipitants evident in the literature regarding relapsing alcoholics, i.e., negative affect, external stressors, or simple urges. Nearly 25% of the responses in this study, however, needed to be scored in an entirely independent category of precipitants related specifically to symptoms of PTSD

(sleep loss, nightmares, being "on guard," and trauma-related ideation). These data suggest that, at the very least, PTSD alcoholics' attributions regarding what precedes a relapse may be intimately bound to the unique symptoms from which they suffer.

Recent work in the alcohol field has centered on biological aspects of extreme stress symptoms and their interaction with the CNS depressant properties and disinhibitory mechanisms of alcohol ingestion (cf., Kosten & Krystal, 1988). Volpicelli (1987), for example, developed a model for understanding drinking in response to uncontrolled stress, emphasizing constructs from the learned helplessness paradigm. Although experimental studies in toto appear to fail to support the tension-reduction hypothesis, reexamination of uncontrollable stress paradigms clearly indicates a temporal link between drinking and stress. Increases in alcohol consumption follow uncontrollable aversive events (Volpicelli, 1987, p. 385). Volpicelli's analysis suggests that "tension relief"—or the termination of the aversive stimulus—reliably precedes drinking. A secondary hypothesis postulated by that author is that alcohol ingestion is reinforced by effects that substitute for decreased endorphin activity after presentation of shock. Examination of historical variables such as alcohol exposure during combat duty and its link to course and current presentation of the disorders appears to be an important area for assessment and further research.

Alcohol use has also been shown to potentiate anxiety in both normal and clinical samples (Stockwell, Small, Hodgson, et al., 1984; Vaillant, 1980). Thus, continued drinking may exacerbate PTSD symptoms, which, in turn, can precipitate episodes of abusive drinking. Classical conditioning may account for this influence. However, higher order conditioning as well as cognitive influences are likely to be as influential. Withdrawal symptoms experienced as anxiety or PTSD symptoms per se have indeed been identified by a number of authors as precipitants to symptom exacerbation (Kosten & Krystal, 1988; Risse, Whitter, Burke, et al., 1990). One hypothesis is that the withdrawal symptoms can directly potentiate preexisting psychopathology of PTSD, such as rage and aggression (Risse et al., 1990). Another hypothesis may occur at an attributional level. For example, "What is happening to me?" "Am I falling apart?" or "Is this my PTSD worsening again?" are questions that may plague comorbid patients. Finally, at least one author has suggested that alcoholism, because of its numerous tragic consequences for the sufferer and his or her family, can be considered a traumatic stressor (Bean-Bayog, 1988).

A recent review by Kushner, Sher, and Beitman (1990) suggests that the interaction for clinical anxiety and alcohol use differs significantly across the anxiety disorders. Although the literature on generalized anxiety disorder (GAD) and panic patients suggests that tension reduction and self-medication may account for some drinking, agoraphobics and simple

phobics do not show such trends. Data suggest that agoraphobics, for example, drink in a variety of situations and tend to show greater interaction between their anxiety and alcohol use. Based on these observations, it is not unlikely to expect a unique covariation in the symptoms of the PTSD-alcoholic, again warranting model development, treatment, and research in this specific area.

Impairment Argument. During the 1980s, much progress was made in identifying and clarifying the nature of the relationship between substance abuse and psychological disorders. First, studies conducted in a variety of drug treatment settings demonstrated that many people who seek drug abuse treatment have coexisting psychological impairments. Several groups of independent investigators all found high levels of psychological disorder among people seeking drug or alcohol treatment (Dorus & Senay, 1980; Rounsaville, Weissman, Crits-Cristoph, Wilber, & Kleber, 1982; Rounsaville, Weissman, Rosenberger, Wilber, & Kleber, 1979; Steer & Kotzker, 1980). Similarly, McLellan and his colleagues (McLellan, Childress, Griffith, & Woody, 1984; LaPorte, McLellan, O'Brien, & Marshall, 1981) found different psychiatric diagnoses among those seeking treatment for the abuse of different drugs.

In addition to documenting the prevalence of psychopathology among people seeking treatment at drug or alcohol abuse facilities, recent studies have demonstrated the important role of comorbid diagnoses in predicting response to treatment. For example, Rounsaville and his colleagues (e.g., Kosten, Rounsaville, & Kleber, 1983) found both severity of psychological impairment and the presence of specific psychiatric diagnoses at intake to be predictive of long-term treatment outcome for opiate addicts. Additionally, in a controlled trial of the efficacy of psychotherapy as an adjunct to methadone maintenance treatment for opiate addicts, Woody, McLellan, Luborsky, and O'Brien (1985) found that the presence of specific psychiatric disorders, such as major depression and antisocial personality disorder (ASP), interacted with drug dependence to affect client response to treatment. Opiate addicts with no pretreatment psychological impairment were found to improve significantly with treatment, as did those who met criteria for major depression. Addicts with ASP alone, however, showed little improvement as a function of treatment, whereas addicts with ASP and depression at intake responded almost as well as those with depression alone. Thus, although ASP alone was a negative predictor of opiate addicts' response to treatment, its effects appear to be mollified substantially by the presence of a co-occurring depressive disorder and other psychiatric symptoms (cf. Gerstley, Alterman, McLellan, & Woody, 1990).

Recent drug abuse treatment studies have also demonstrated that psychotherapy can be an important part of a comprehensive treatment plan

for at least some substance abusers. In the controlled trial of psychotherapy in the treatment of methadone-maintained opiate addicts described previously, Woody and his colleagues demonstrated that both cognitive-behavioral and supportive-expressive interventions, when added to standard drug abuse counseling, resulted in improved treatment outcome. This study is important because it speaks to client treatment in the study of multiple disorder patterns.

"Patients with PTSD seen at VAMCs (Veterans Affairs Medical Centers) consistently function at a lower adaptive level (e.g., DSM-III Axis 4) than patients with other psychiatric disorders," at least according to the ratings provided by surveyed clinicians (VA Health Systems Research & Development, 1987; Chief Medical Director's Special Committee on PTSD, 1987). The lower level of reported adaptation may be due in part to the chronicity of PTSD in Vietnam combat veterans (Kolb, 1987) as well as the pervasive symptom complex. With chronic PTSD comes a host of other life dysfunctions that parallel problems suffered by alcoholics. Broadly speaking, these include intrapersonal factors (biological and psychological) and interpersonal problems in the life system, such as marital and family difficulties, deficits in occupational functioning, and social and communication skills. To underscore the impairment argument for model development, we will briefly review areas of convergence in PTSD and substance abuse.

In a meta-analysis of the psychological problems of Vietnam veterans, Kaylor and colleagues (1987) found that they were more likely than their civilian counterparts to have difficulties with depression, anger, anxiety, and suicidal tendencies. Furthermore, combat veterans who meet criteria for PTSD are more likely than their non-PTSD counterparts to have such problems (Kulka et al., 1990).

First, the biological sensitivity documented in both PTSD patients and alcoholics to stimuli relevant to their conditions is an area of remarkable convergence. The psychophysiological reactivity of veterans with combat PTSD is well documented (Malloy, Fairbank, & Keane, 1983; Blanchard, Kolb, Pallmeyer, & Gerardi, 1982). In the presence of stimuli reminiscent of the original trauma, measures of autonomic arousal rise precipitously, and to a degree that is difficult to fake (see chapter by Litz et al. for a more detailed review of this work). Moreover, PTSD sufferers appear to exhibit a continual state of hyperarousal (Gerardi, Keane, Cahoon, and Klauminzer, 1989). These hallmark symptoms of PTSD have been conceptually linked directly to the traumatic exposure. Two-factor theory of avoidance conditioning combines classical conditioning principles with operant avoidance and has become a fruitful way of studying PTSD (Fairbank & Brown, 1987; Keane, Fairbank, Caddell, Zimering, & Bender, 1985).

In a manner similar to the PTSD victim's response to traumatogenic

stimuli, it can be argued that alcoholics are psychophysiologically reactive to stimuli that remind them of drinking. Indeed, physiological differences have been demonstrated between alcoholics and nonalcoholics when exposed to the sight and smell of alcohol (Pomerleau, Fertig, Baker, & Cooney, 1983; Kaplan, Meyer, & Stroebel, 1983).

Poulos, Hinson, & Siegel (1981) outlined a model of classical conditioning of alcohol cues, both interoceptive and exteroceptive, that increase the likelihood of drinking. This type of conceptual reasoning has led to a number of studies on alcohol cue exposure, with various manipulations relevant to the ecology of relapse (Niaura, Rohsenow, Binkoff et al., 1988). After a priming dose of alcohol, for example, alcoholics report a significantly increased desire to drink in the presence of alcohol cues (Hodgson, Stockwell, & Rankin, 1979; Kaplan, Meyer, & Stroebel, 1983; Laberg & Effertsen, 1987). Negative mood states can also elicit a desire for alcohol in the absence of external cues for drinking (Litt, Cooney, Kadden, & Gaupp, 1990). Cognitive changes have also been documented in response to alcohol cues (Cooney et al., 1987).

As research progresses, more and more links have been found between cue reactivity and treatment progress, outcome and relapse (Niaura et al., 1988). Continued theoretical development is needed in the area of cue reactivity among PTSD substance abusers. Does the presence of traumatogenic conditioned stimuli increase the psychophysiological urge to drink? Is there incremental enhancement of the urge in the added presence of alcohol cues?

Finally, and at an even more complex level, the approach-avoidance conflict observed in patients posttrauma (Roth & Cohen, 1986) is mirrored in the conflict observed in the alcohol reactivity literature. That is, depending upon motivational states, the patient may view exposure to alcohol-related stimuli as highly objectionable and aversive, particularly if a great deal of energy is being expended toward behavioral restraint. Another individual who is not so conflicted may welcome a challenge or may indeed be less invested in absolute abstinence, thus automatically responding to the stimulus as a reinforcer.

Another area of convergence between disorders is in coping strategies and coping skills deficits. Penk, Peck, Robinowitz, Bell, and Little (1988), and Penk et al. (1981) reviewed the literature on coping among substance abusers. They found that a common theme in this work is that the use of a substance indeed indicates a failure to cope adequately. Moreover, substance abusers as a group show a clear bias toward avoidant styles of coping. These data are fully consistent with other psychometric data on the social withdrawal and avoidance coping style of veterans with PTSD (Fairbank, Hansen, & Fitterling, 1991) and some victims of sexual assault (Foa, Steketee, & Olasov Rothbaum, 1989). In addition, there is an increased

likelihood that a PTSD patient and an alcoholic patient will struggle concomitantly with depression (Kulka et al., 1990). Taken as a whole, these data suggest that the interaction of such problem categories would only strengthen a defensive avoidance and withdrawal.

Relapse Rates Argument. A substantive body of evidence has been amassed regarding the high relapse rates in the addictions posttreatment. As Saunders and Allsop (1987) succinctly summarize, "If a relapse is any drug use after initiating a period of abstention, then over 90% of clients will, in any 12-month period, exhibit such behavior" (p. 418). They also note that defining relapse as a return to pretreatment levels of substance use typically generates relapse rates in the 45% to 50% range. Although these particular definitions of relapse have been challenged in this literature, the fact remains that addictive behavior is highly resistant to long-term change. In addition to strong behavioral advances (e.g., Marlatt & Gordon, 1985; Brownell, Marlatt, Lichtenstein, & Wilson, 1986) that conceptualize the process of relapse and precipitants or predictors of relapse, significant theorizing has begun to examine the reciprocal influences of the patient's natural environment on relapse and recovery (Moos, 1990). These developments have not only increased explanatory power in behavioral prediction, but have also led to additional entry points for intervention.

When one considers the convergence of PTSD and substance abuse, then certainly it is reasonable to expect an increased likelihood of relapse among dually diagnosed individuals versus a non-PTSD alcoholic, for example. Whether the events leading to the relapse are conditioning based, are rooted in the chronicity of one of the disorders, or in the poor social support of a poorly adapted person with PTSD, risks for relapse seem to be more abundant. These questions have yet to be formally addressed by any research. However, a few studies have begun to attend to the recalcitrance of PTSD alone posttreatment.

Perconte, Griger, and Bellucci (1989) followed 102 Vietnam combat veterans treated in a partial hospitalization program for PTSD. Within a 2-year follow-up period, 26 of 47 patients (55.3%) who were initially rated as improved suffered a subsequent hospitalization for their PTSD. Only 21 of 74 veterans (28.4%) remained improved over that follow-up period. Preliminary outcome data such as these confirm the risk inherent in having PTSD. The question remains: Does the dual diagnosis predict even greater relapse potential?

Cost Effectiveness Argument. Some data suggest that substance abuse treatment in conjunction with PTSD treatment improves outcome for dually diagnosed patients (Kuhne, Nohner, & Baraga, 1986). Unfortunately, this is an isolated piece of evidence. A great deal of concern has been expressed regarding the lack of continuity of care in this area (Lehmann, 1990). One

common clinical observation is that patients have received piecemeal interventions, obtaining treatment for substance abuse problems and then PTSD, or vice versa, but rarely an integration of the two (Schnitt & Nocks, 1984). Formal aftercare that addresses the dual diagnosis has not been reported to our knowledge. In response to this reality, a progressive approach has already been adopted in the Department of Veterans Affairs. A number of PTSD substance abuse units have been funded to augment existing outpatient and inpatient care in these areas (Lehmann, 1990). It seems quite logical to conclude that programs conceived with the unique problems of the PTSD substance abuser will be more cost effective than a piecemeal or additive approach to therapy. Progressive administrative moves mirror important advances in the theoretical and clinical literature. Increasing sophistication does not necessarily mean increasing complexity. Rather, efficiency is enhanced by focusing a limited set of resources, in an interactive conceptual framework, upon a unique problem population.

BUILDING AN INTEGRATED MODEL

After reviewing the epidemiology, the descriptive data, and the reasons we need a working model for treating the PTSD substance abuser, it becomes clear what significant questions must at least be addressed, if not answered, in a practical, multidimensional treatment model. Some of these questions are listed below:

- How can therapists increase the PTSD substance abuser's motivation for therapy?
- What should be the first course of action?
- What places a patient at risk for future failure?
- Given the strong technology for change, what do we know about timing of interventions, effects of practice, and beliefs or expectancies about change, which will strengthen what is learned?
- How should we proceed if the patient is not amenable to imaginal techniques?

To provide a coherent framework from which to consider these difficult questions, we will outline a stage model of change and intervention sensitive to drug and alcohol interactions with PTSD symptoms. Social learning theory (Bandura, 1978a; Bandura, 1978b, 1982) has become fertile ground for the development and understanding of the process of change in individuals in therapy. In addition to borrowing constructs from this area of theory development, we will incorporate observations from other approaches to understanding addictive process, abstinence, and relapse. Fi-

nally, an important novel component complementing a stage model is a recursive analysis of self-regulatory strategies occurring in response to therapy.

The mainstays of learning theory that have served as reliable guideposts to therapy for so long continue to be relevant here. New behaviors are acquired in the presence of appropriate reinforcement, are emitted and practiced over time, are generalized across settings, and become maintained in those settings. Psychotherapy of all orientations can be conceptualized as an ongoing process of differential reinforcement, counterconditioning, and other types of learning within the interpersonal context, with the aim of producing more adaptive strategies or skills in living.

Arnold Lazarus broadened the scope of behavior therapy to capitalize upon its functional properties (Lazarus, 1971). That is, to examine the context in which a behavior is maintained or reinforced is critical. Thus, the PTSD alcoholic, for example, must be assessed for what conditions appear to lead to heavy drinking, what evokes memories of extreme events, and what precedes isolation and withdrawal. Prior to making these functional assessments, however, we strongly believe that an understanding of the potential patient's stage of change must be acknowledged. Indeed, such an orientation inherently conveys a respect for the patient's stage of adjustment and does not place a value judgment upon those who do not wish to engage in therapy.

Prochaska and colleagues (Prochaska & DiClemente, 1983) significantly influenced the field in their attempt to understand the naturalistic stages of change in which smokers attempt to quit. They classified the strategies smokers were employing into five stages: precommitment, commitment, action, maintenance, and relapse. The precommitment stage involves the contemplation of stopping the addictive behavior and considering the options, risks, and consequences. The commitment stage involves a resolution or formal decision to quit with strong intentions to engage in activities that will reduce the behavior. Some experimentation with actual change techniques was noted in this group. The third stage, the action stage, was marked by strong efforts at behavior change and "deaddiction." This sample of "self-changers" intuitively adopted many traditional behavioral techniques such as stimulus control, thought stopping, delays to use, and relaxation. These individuals reported strengthening their abstinence through stimulus and response generalization. Finally, the relapsers characterized those individuals who were facing difficulties in maintaining their goals at reduction or cessation of tobacco use. Anecdotally they appeared to be in emotional conflict over the inconsistent behavior.

We have chosen to modify this stage model to accommodate observations of these patients in therapy as well as the realistic demands and therapeutic constraints in treating the addicted PTSD patient. Much of the

model development can be attributed to direct experience at the National Center for PTSD in Menlo Park, California, where the first clinical demonstration project for the treatment of the combined disorders was founded. The 30-bed program was fully incorporated into the therapeutic community for combat veterans, still the largest inpatient program in the Department of Veterans Affairs (Berman, Price, & Gusman, 1982).

Our model proposes five stages that vary slightly from Prochaska in how each stage is demarcated. These stages include precommitment, commitment, action phase 1 (practice), action phase 2 (generalization and maintenance), and the relapse stage (see Figure 5.1). The second, separate action phase is intended to emphasize an active therapeutic focus on encouraging the patient to implement new skills in broader contexts.

The precommitment stage precedes the formal therapeutic contract to work on the patient's problems. Usually, this stage means stabilization through detoxification or inpatient hospitalization for suicidal or homicidal acts or intentions. In some instances, it may mean stabilizing highly disorganized, psychotic, or aggressive behavior. Although the challenge of therapy cannot be fully appreciated by the PTSD substance abuser at this stage, the respite provided by the therapist from often-dramatic life circumstances can create powerful positive expectancies about psychotherapy. If the crisis was precipitated by war-related stress, acknowledging that pain can build immediate rapport in preparation for subsequent trauma exposure procedures. Also, broaching the use of medication to control substance use—such as disulfiram or naltrexone—is useful at this stage, when the negative consequences of the substance use are still salient.

The commitment stage may be the most important step in helping the

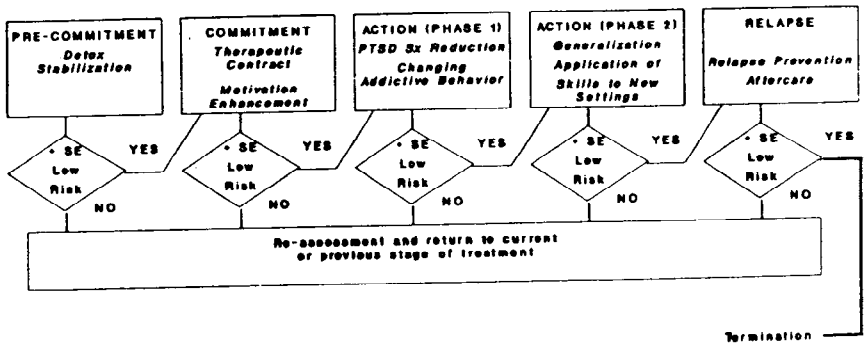

FIGURE 5.1. Stage model for treating the PTSD substance abuser. Note: + SE (self-efficacy) refers to increased confidence to resist the urge to drink or use substances; Low Risk refers to other vunerability factors that may be evident to the clinician (physiological factors, social, occupational, etc.).

individual obtain the most from the therapy available. Two goals are prominent here: to contract with the patient to engage in therapy by explaining what can be gained from therapy (and what is lost by not attempting therapy) and to increase the motivation for this substantive task. William Miller (1985) provides a comprehensive review of how motivation can be influenced, usually through simple behavioral procedures. These can include helping the patient set manageable short-term goals (see Bandura & Schunk, 1981), setting realistic expectations about therapy in general, reinforcing the patient for past successes and cognitions that are consistent with change in therapy ("Maybe I can do things differently and maybe I'm not a bad person after all"). In the commitment stage, brief education about the addiction as well as PTSD is highly recommended. The patient can begin to understand how the disorders have interacted based upon personal experiences highlighted by the therapist.

As learning progresses, the patient moves from commitment to action (phase 1: practice). Here the substance of the interventions is aimed at satisfying the three therapeutic goals in the multiply diagnosed (reducing positive symptoms, negative symptoms, and reversing the addiction). Problem-solving training, direct therapeutic exposure (DTE), and self-control training in the addictions including cue exposure, are all appropriate interventions for this phase of change. Relief from disturbing symptoms typically marks precipitous progress in therapy. These interventions will be described in detail later in this chapter. Close monitoring of expectancies is important to maintain a realistic view of the future for the patient.

The next phase, the action stage (phase 2: generalization), reflects the improvement in the skills of the patient to anticipate opportunities to use previously learned techniques. Here the therapist is invaluable in modulating the degree to which new challenges are undertaken—in intimate relationships, as a parent, in the work setting, in the community. Emphasis is placed upon broadening the social support network and deepening existing ties.

Finally, the relapse stage is ideal for focusing upon the potential for lapse and relapse, particularly in the area of returning to use the substance of choice. Formal intervention through relapse prevention training, with adaptations that incorporate a conceptualization of PTSD themes and symptoms, appears to hold promise for forestalling relapse. Cue exposure in imagination is repeated here through the use of the relapse fantasy. Positive coping imagery followed by role play increase the likelihood of emitting an adaptive response when faced with urges or cravings. Drink- and drug-refusal training is seen as practical and effective by PTSD substance abusers and is the last component of the intervention.

As is evident from the above elaboration of stages, this model is not

strictly linear. PTSD has been conceptualized in terms of the person-environment interaction (Keane, 1989), and behavior therapy has been strongly influenced by systems approaches to assessment and treatment (Evans, 1985; Staats, 1978). Rosenbaum (1990) has elaborated upon an elegant model of self-regulation that attempts to integrate findings from a wide range of literature. Acknowledging the importance of some of these conceptual developments in behavior therapy, we will attempt to address the complexity of treatment decision making and the vicissitudes of individual patient development through the inclusion of a recursive analysis of two central variables.

Consideration of two important variables—vulnerability and self-efficacy—may lead the therapist and patient to reconsider what the subsequent steps in the treatment plan will be. We propose that the first construct, *vulnerability* factors, must be consistently monitored to help the patient maintain gains. With the rich fund of information amassed regarding relapse, forewarning the patient early of these risks can avert therapeutic backsliding; the awareness of these risks by both patient and therapist can also help regulate the pace of therapy. One Korean veteran, a PTSD alcoholic who was treated by one of the authors (FRA), showed significant improvement in response to implosive therapy and relapse-prevention training. Although the gains were remarkable, 1 full year after the most intensive part of therapy, other vulnerabilities in the area of anger management and his fear of loss of control arose in the context of an increasingly intimate relationship. As he became closer and more emotionally expressive, these feelings began to emerge. His "vulnerability profile" helped guide therapy well before these issues actually confronted the patient. Moreover, the patient himself experienced a great deal of control in anticipating these feelings prior to their occurrence.

The second construct that bears repeated scrutiny in each developmental stage is self-efficacy, or the confidence the patient has to engage in a particular behavior (Bandura, 1978a). Progress in therapy has been shown to be well predicted by changes in self-efficacy, even prior to enacting the early learned behavior (Bandura, 1982). Incorporating a repeated assessment of self-efficacy is particularly useful for periods of therapy in which changes progress at a slower rate, become stalled, or actually reverse. With the convergence of these disorders, it is common that anxiety will markedly diminish, but the broad goal of abstinence still remains. This may involve constructing an environment that promotes nondrug-related activities and severing or at least restricting old ties to alcohol and drug use. With these new challenges, we often observe a deflated sense of self-efficacy. Immediate interventions may be aimed at directly enhancing these self-perceptions through reminders of past success, setting even smaller goals in therapy, cognitive restructuring or taking a therapeutic "breather" (Goldfried & Robins, 1982).

Many long-term alcohol abusers have had little experience predicting the level of effort that therapy can require. What has commonly been observed as a process of denial can be operationalized as excessively high perceptions of self-efficacy. One recent study found that excessively high ratings of self-efficacy can predict relapse postdischarge in hospitalized alcoholics (Burling, Reilly, Moltzen, & Ziff, 1989). If the patient appears excessively self-assured or appears to be ignoring important details of his or her behavior, then interventions heightening the salience of ignored or minimized information can be therapeutically mobilizing.

SPECIFIC BEHAVIORAL INTERVENTIONS

Direct Therapeutic Exposure

Direct therapeutic exposure (DTE) has been operationally defined as repeated or extended exposure, either in vivo or in imagination, to objectively harmless but feared stimuli for the purpose of reducing anxiety (cf. Boudewyns & Shipley, 1983). Both graded (e.g., systematic desensitization) and nongraded (e.g., flooding and implosive therapy) forms of DTE have been applied to PTSD to reduce anxiety associated with intrusive memories of extreme events and exposure to stimuli or events that resemble aspects of the precipitating traumatic event. A review of the extant literature on the use of DTE for PTSD appears in the preceding chapter by Barbara Olasov Rothbaum and Edna Foa. For a review and discussion of the behavioral conceptual models from which DTE strategies are derived, the reader should refer to the earlier chapter by Foy and colleagues.

Recently, three independent research teams have completed controlled clinical trials of DTE for combat-related PTSD and have reported generally positive findings regarding the efficacy of this strategy for reducing PTSD symptomatology (Boudewyns & Hyer, 1990; Cooper & Clum, 1989; Keane, Fairbank, Caddell, & Zimering, 1989). In particular, DTE appears to be effective in reducing positive PTSD phenomena, including reexperiencing symptoms, sleep disturbance, hypersensitivity to sound, and state anxiety (Cooper & Clum, 1989; Keane et al., 1989).

Unfortunately, the encouraging findings from these controlled, outcome studies are difficult to generalize to the substantial population of patients with concurrent PTSD and substance abuse problems. In these studies, PTSD-substance abuse patients were either excluded from the study protocol (Boudewyns & Hyer, 1990) or the prevalence of concurrent substance abuse among study participants with a diagnosis of PTSD was not reported (Cooper & Clum, 1989; Keane et al., 1989). Thus, an important question that is largely unanswered involves the extent to which DTE is effective in the treatment of patients with comorbid PTSD and substance abuse.

Indeed, despite promising preliminary research findings on the utility of DTE for PTSD, some clinicians express reluctance to use this intervention with PTSD substance abusers. Recently, Litz, Blake, Gerardi, and Keane (1990) surveyed clinicians experienced in the use of DTE for PTSD and found that 27% consider "concurrent character or substance abuse disorder" as contraindicating the use of DTE with PTSD patients. One concern, for example, is that PTSD patients with longstanding problems with alcohol or drug dependence may experience cognitive deficits that impair their ability to image. Cognitive impairment could render ineffective DTE techniques based upon imaginal flooding. Another concern is that patients who rely on alcohol or illicit drugs as a primary coping strategy for PTSD symptoms may tolerate poorly the increased arousal elicited by exposure techniques. The concern expressed here is that DTE may increase the potential risk of relapse to alcohol or drug abuse among poorly stabilized PTSD substance abusers.

Although hypotheses about the utility of DTE for PTSD-substance abusers have yet to be tested empirically in randomized clinical trials, several studies using single case designs have reported that treating PTSD symptoms with DTE was associated with reductions in concurrent substance use. For example, Black and Keane (1982) treated a 55-year-old male naval veteran of World War II with severe anxiety associated with combat memories and a 10-year history of alcohol abuse. Treatment consisted of repeated imaginal exposure to two scenes involving traumatic combat experiences. Improved functioning, including decreased anxiety and alcohol abuse, occurred over 24 months of posttreatment follow-up. One episode of alcohol abuse occurred during the 24-month follow-up period.

Keane and Kaloupek (1982) reported reductions in PTSD symptoms and alcohol abuse in a Vietnam veteran following treatment for PTSD that included DTE as a major component of the intervention. The patient was a 36-year-old divorced male whose presenting problem was alcohol abuse (1 quart of gin per day for nearly 5 years) for which he was treated in a 4-week inpatient alcohol program. He returned intoxicated to two consecutive follow-up appointments, where it was learned that he was experiencing severe symptoms of combat-related PTSD. In this study, three extreme events that comprised the content of the veteran's intrusive memories of combat were presented repeatedly until they evoked low levels of anxiety relative to pretreatment levels. One-year follow-up indicated improvement across multiple domains of functioning, including no abusive drinking.

We often include DTE in action phase 1 because, as stated earlier, a major goal of treatment of the PTSD substance abuser is to reduce the distressing positive symptoms of PTSD: the various symptoms of reex-

periencing and hyperarousal. We view the reduction of positive PTSD symptoms as essential to the treatment of most PTSD substance abusers, since positive PTSD symptoms per se are viewed by patients as major precipitants of alcohol and drug abuse relapse (Abueg et al., 1990).

Implementing DTE. Since imaginal flooding and implosive therapy are among the more frequently used DTE techniques for PTSD, we will focus our comments on these procedures (Fairbank & Brown, 1987; Brown, Abueg, & Fairbank, 1991). However, the reader should keep in mind that other forms of DTE may be appropriate, such as, for example, in vivo systematic desensitization.

Unfortunately, the utility of systematic desensitization for PTSD would appear to be diminished by the fact that it is frequently difficult to implement. For example, given the high levels of tonic and phasic arousal associated with PTSD (Malloy et al., 1983), we have found that PTSD patients have difficulty identifying meaningful low-level conditioned stimuli (CS) that they can tolerate while maintaining a relaxed state. Perhaps as a function of the relatively broad stimulus generalization gradient associated with PTSD, we have also found that the presentation of relevant "low-stress" stimuli often quickly elicits intrusive thoughts about "high-stress" traumatic stimuli in veterans with PTSD. As a result, progression through the stimulus hierarchy often occurs at an extremely slow pace. From the perspective of implosive theory, systematic desensitization is contraindicated because of the insufficient presentation of the CS complex. The potential for anxiety enhancement during partial CS presentation has been established in the laboratory but not in any human clinical studies (cf. Brown et al., 1991).

In implementing imaginal flooding or implosive therapy for PTSD, the therapist is confronted with three major tasks. The first of these involves setting the scene in which the extreme event occurred and presenting the details of the event in a meaningful way. Setting the scene is accomplished by describing the situation in which the specific event occurred—usually based on prior information obtained from the patient. In presenting the details of the extreme event, it is important to carefully describe both characteristics of the event itself and aspects of the patient's response at the time that the event occurred. Our experience has been that the more elaborate and complete the details of the extreme event, the better the responsivity of the patient. Accordingly, a full depiction of the extreme event should include details registered in all sensory modalities—sight, sound, smell, and touch. In general, we have found that it is most effective to elicit this information for the time periods immediately prior to, during, and following the traumatic event. Additionally, exposure should include the presentation of cues associated with the patient's response at the time

of the event. Response cues should also be as rich in detail as possible, focusing on thoughts, emotions, somatic reactions, and feelings that the client experienced at the time of the event. Examples of clinical dialogues that demonstrate how to implement this component of imaginal flooding and implosive therapy with adult PTSD patients can be found in articles by Keane, Fairbank, Caddell, Zimering, and Bender (1985) and Lyons and Keane (1989). Examples from the child clinical area can also be found in articles by Saigh (1987a, 1987b). In a similar vein, Rychtarik, Silverman, Van Landingham, and Prue (1984) provide a description of imaginal flooding in the treatment of a 22-year-old incest victim.

A second key aspect of implementing imaginal flooding or implosive therapy is to monitor carefully the patient's reactions to the traumatic scene and to watch carefully for obvious and subtle signs of arousal to specific aspects of the scene. In working with combat veterans with PTSD, we have found that individuals vary greatly in their modes of expressed arousal and in the intensity of their arousal responses. Indicators of arousal during DTE may range from clearly observable changes in motoric activity (e.g., increased fidgeting and hand wringing) to subtle (yet detectable) changes in respiration (Fairbank et al., 1983).

A third critical component of implementing DTE is to encourage the patient to maintain exposure to the most salient aspects of the traumatic memory. In technical terms, this component of DTE is referred to as response prevention, which is the prevention of avoidance responses that are assumed to play a critical role in the maintenance of adverse arousal to reminders and memories of combat events. Operationally, response prevention is often accomplished by exposing the patient to the most meaningful aspects of the traumatic event repeatedly within a single session or over the course of sequential sessions. The reader is again referred to Keane et al. (1985), Saigh (1987a, 1987b), Rychtarik et al. (1984), and Lyons and Keane (1989) for practical guidelines on how to implement this component of DTE.

A legitimate question for treatment providers to ask is, How will my patient and I know when DTE is complete? The answer is criterion based. You will know that the goal of DTE for PTSD has been accomplished when memories and reminders of traumatic events cease to elicit dysfunctional levels of anxiety and arousal.

Problem-Solving Skills Training

Treatment providers have long observed that individuals with PTSD who abuse drugs and alcohol often have histories of poor problem solving. The daily lives of PTSD substance abusers often are chaotic and appear to evolve from one crisis to another. Alcohol- or drug-dependent individuals

often act impulsively when confronted with a problem and fail to consider either the consequences of their actions or the possible range of alternative solutions (O'Farrell & Langenbucher, 1985). Deficits in effective problem solving often lead to unsatisfactory solutions, especially when drug or alcohol use is the solution for coping with problems. Clearly, patients who rely on drugs or alcohol as a strategy for coping with situational and emotional problems are at increased risk for continued substance abuse and relapse following treatment. Relapse among PTSD substance abusers is especially likely when they do not have the problem-solving skills necessary to cope with the stress of low-status employment, specific situations of the nonabusing world such as recreational alcohol use of coworkers, and the effort of maintaining gains made in treatment (cf. Platt & Metzger, 1987).

One promising intervention strategy is to teach PTSD substance abusers flexible, practical, and relevant skills for resolving problems associated with both PTSD and substance abuse. The purpose of problem-solving therapy is to teach an adaptive approach to resolving problems that will enhance the patient's self-efficacy and reduce the likelihood of alcohol or drug use. The general approach adopted by most problem-solving-oriented therapies is to teach individuals to adopt a multistep approach toward resolving problematic life situations (D'Zurilla, 1986; Goldfried & Davidson, 1976; Nezu, Nezu, & Perri, 1989; Platt, Taube, Metzger, & Duome, 1988; and Spivak, Platt, and Shure, 1976). The basic components of most problem-solving interventions include several interdependent processes, including (a) adopting a problem-solving orientation, (b) defining problems accurately, (c) generation of alternative solutions, (d) decision making, and (e) implementation and monitoring.

We recommend that at least one treatment session during action phase 1 be dedicated to each of the major component processes of problem solving (problem orientation, problem definition, generation of alternative solutions, decision making, and implementation). Our expectation is that earlier treatment sessions will require considerable instruction and training and may often be entirely dedicated to teaching basic problem-solving skills. For some patients, effective learning will occur relatively rapidly, such that later sessions will focus primarily on the maintenance and generalization of problem-solving skills. For these patients, the portion of a session dedicated to problem-solving skills maintenance may be comparatively small (e.g., 10 to 15 min.). In terms of implementing problem-solving therapy, we advocate the use of procedures that have been found to be effective in skills training in general, such as instruction, prompting, modeling, behavioral rehearsal or practice, homework assignments, shaping, reinforcement, and feedback.

The initial session of problem-solving skills training should focus on

providing the patient with information on the rationale and relevance to PTSD, substance abuse, and other specific problem areas of each of the five major problem-solving operations. A clear presentation of the purpose and goals for problem-solving skills training should occur before actual training begins to increase the likelihood that the patient and treatment provider will operate from a common treatment framework.

The following is an example of a rationale for PTSD substance abusers adapted from Nezu et al. (1989).

> Another approach to treatment that I am recommending is problem-solving skills training. In addition to having to deal with the debilitating symptoms of PTSD, such as distressing and unwanted thoughts about extreme events, people who have PTSD usually have to cope with lots of other problems. These often include severe problems with family and friends; serious problems with employment and financial support; legal difficulties; and problems with alcohol, drugs, and other forms of psychological distress, such as depression. According to this approach, some people are especially prone to abusing alcohol when they think that they are unable to cope with symptoms of PTSD and other associated problems. Of course there are lots of reasons why people have difficulty coping. At times people are overwhelmed by the severity of their PTSD symptoms and other problems, and think that they can't do anything to change these problems. At other times people are unable to cope because they don't know how to deal with a particular problem because they never learned the skills necessary to effectively resolve problems. Clearly, the kinds of things that we think and do when confronted with a problem will have a big influence on how effectively we cope with and resolve it. Effective problem solving is a skill that has many components that are likely to be helpful in learning to resolve problems associated with having PTSD. We will be focusing on five major components of problem solving: how we think about problems associated with PTSD; how we define these problems; how we arrive at solutions; how we make decisions about what to do to solve a problem; and how we go about implementing the solution and determining how well it worked.

Training in Adopting a Problem-Solving Orientation. In this initial stage the clinician focuses on teaching the patient how to adopt a problem-solving coping style when confronted with problems. It is important to explain this step carefully to patients, as PTSD substance abusers commonly react impulsively when confronted with a problem. Nezu et al. (1989) have suggested that training in this stage be geared toward providing patients with a rational orientation to problems in living and problem solving as a means of coping effectively. They recommend that goals include encouraging the patient to adopt the following aspects of a positive and realistic orientation: (a) acceptance of problems as a normal part of living; (b) belief in one's ability to solve problems effectively; (c) labeling of one's experience of distress as a cue that a problem exists; (d) inhibiting the tendency to respond automatically or impulsively and developing the ability to think things through carefully; and (e) recognizing that problem resolution often entails considerable time and effort.

Many PTSD substance abusers, whose reflexive reactions to problems are elicited by high levels of anxiety, may benefit from training in the use of self-control calming strategies. In our experience, an intervention that appears to be helpful to PTSD substance abusers who are unable to "stop and think" because of overwhelming anxiety is relaxation training using progressive muscle tense-and-release procedures and cue-controlled relaxation strategies (e.g., Bernstein & Borkovec, 1973; Fairbank, Gross, & Keane, 1983). The thesis here is that once the patient is able to calm down and arrest "out-of-control" thoughts, anxiety, and arousal, she or he can begin the process of thinking things through logically and carefully. An example of a script for relaxation training is contained in the preceding chapter by Olasov Rothbaum and Foa.

Training in Defining Problems and Setting Goals. In this stage, you should help the patient to develop skills that will enable him or her to understand the problems at hand. Not uncommonly, PTSD substance abusers have unspecified, vague, or very general presenting complaints (e.g., "My nerves are shot and I need some help," "My old lady is driving me nuts"). The overall goal of this stage of problem-solving training is to teach patients to be able to define and formulate problems on their own and in a manner that permits the implementation of subsequent steps. As noted by Nezu et al. (1989), this may be accomplished by teaching the patient to (a) seek all available facts and information about the situation; (b) describe the facts in clear and unambiguous terms; (c) identify those factors that actually make the situation a problem; (d) differentiate relevant from irrelevant information and objective facts from unverified assumptions and interpretations; and (e) set realistic problem-solving goals.

As recommended by D'Zurilla (1986), this task can be facilitated by asking *who, what, when, where,* and *why* questions about each problem. Who is involved? What happens (or does not happen) that bothers you? Where does it happen? Why does it happen (i.e., known causes or reasons for the problem)? What is your response to the situation (i.e., actions, thoughts, and feelings)?

Below is an abbreviated excerpt from a session that focuses on the issue of problem definition and formulation.

Therapist: Tell me again what happened when the nurse gave you your medication today?

Patient: She insulted me. She threw the meds at me. I tell you, the woman hates me.

Therapist: You are telling me that the nurse told you that she hates you.

Patient: No, she didn't say that. She didn't have to. The way that she threw the cup at me was clear enough. It makes me mad. She wouldn't treat a dog that way. It's insulting.

Therapist: Describe the circumstances at the nurses' station this morning.

Patient: Well, as usual, it was busy. There were more folks in line than usual, though. Only that nasty nurse was on duty.

Therapist: Describe exactly what happened when you received your medication. As we've discussed before, give me a brief, clear, and accurate description of the event itself, with no interpretive language.

Patient: After waiting about 20 minutes I finally got to the front of the line. She gave me my meds and ordered me to take them fast.

Therapist: She ordered you? What did she say exactly?

Patient: Dave, quick, down the hatch, we're busy today (client laughs).

One of the things that occurred in this example of a dialogue was the evolution of the patient's emotional, exaggerated, and overstated description of a problematic interpersonal interaction to a brief description of the event itself with no speculation as to hidden meanings. Frequently, therapists choose to begin the process of problem-definition training by focusing on examples of recent problems of relatively minor significance to the patient. Once the patient has demonstrated the ability to define minor problems accurately, then he or she is ready to advance to the more difficult task of objectively defining problems of a more severe nature.

Training in Generation of Alternative Solutions. In this process, the therapist teaches the patient to generate a range of possible solutions to problems using brainstorming techniques. In the following passage, Nezu et al. (1989) provide an excellent rationale for the importance of this process to effective problem solving.

> Training patients to develop a range of coping options is based on the premise that the availability of a large number of alternative actions will increase the chances of eventually identifying an effective solution. Often patients expect that there is one right answer for each problem and that therapy, or the therapist, will provide it for them. Moreover, in trying to find the right solution to a problem, patients sometimes believe that the first idea that comes to mind is the best one. Therefore, in order to maximize problem-solving effectiveness, the therapist needs to convey to patients the necessity of generating as many different options as possible (p. 180).

The two key aspects of brainstorming—quantity and deferment of judgment—suggest the following rules. First, generate as many ideas as possible. Second, don't criticize the ideas at this stage of problem solving. It is important to note within this context that PTSD substance abusers often complain that they are unable to brainstorm because they can't imagine that there are other solutions to their problems. Therapists are advised to be persistent, tenacious, and patient with attempts to avoid this essential aspect of problem solving. Therapists are also advised against passively accepting standard complaints such as "I can't think of any other solution to this problem. Besides, if I could, I wouldn't need to come see

you." Indeed, therapists should strongly resist the temptation to accept a patient's insistence on helplessness regarding the generation of solutions.

PTSD substance abusers also often have difficulty generating alternatives without immediately evaluating and rejecting them. Through repeated practice and reinforcement, the therapist teaches the patient to generate as complete a list as possible of alternative solutions prior to proceeding to the next stage of problem solving (i.e., decision making).

Training in Decision Making. At this stage, the therapist teaches the patient to predict which alternative solutions are worth pursuing and then to take action. Therapists discuss each potential solution with the patient and encourage him or her to anticipate the likely long-term and short-term consequences of each alternative. In addition, patients should be urged to evaluate the usefulness of each of these consequences for resolving the problem situation.

Resick and Jordan (1988) have noted that when patients have difficulty choosing among the alternatives, it is often helpful to have them assign weights (i.e., scores) to the positive and negative consequences to estimate their relative importance. For example, positive consequences could receive scores from 1 to 100, while negative consequences could be assigned scores from -1 to -100. Although one alternative may have a longer list of positive consequences, it may also have more important drawbacks, while another alternative has fewer important drawbacks and more important gains. While the patient is unlikely to base his or her final decision only upon the total score obtained from the weightings, the process may help the patient in determining what factors are most important in deciding upon a course of action.

Training in Implementing Solutions and Monitoring Effectiveness. At this stage, the patient is encouraged to carry out the selected course of action. Some patients are likely to need considerable encouragement at this stage of problem-solving counseling, given that many of the men and women in treatment for PTSD substance abuse use avoidance as a major coping strategy. Toward this end, the therapist urges the patient to observe the consequences of his or her actions and the actions of the therapist or others who serve as problem-solving role models. It is also important to train the patient to match real outcomes of the solution against the expected or predicted outcomes. If the match is satisfactory, the problem-solving process is complete. If the match is unsatisfactory, the patient should return to step 2—problem definition.

This approach is based on the thesis that problem solving is a skill that PTSD substance abuse patients can learn to use effectively to cope with a variety of problem situations. Whether it is learning how to resolve a conflict with one's employer, control explosive anger episodes with one's

family, or avoid the places and people associated with drug abuse, the goal is to teach the patient practical and flexible problem-solving skills. As an intervention for PTSD substance abuse, problem-solving skills training shapes new, more adaptive behaviors for coping with PTSD symptoms that may trigger episodes of alcohol or drug use and relapse.

Relapse-Prevention Training (RPT)

G. Alan Marlatt and his colleagues (Marlatt & Gordon, 1985) have developed one of the most comprehensive addiction treatment models based upon constructs of social learning, particularly Bandura's self-efficacy theory (Bandura, 1978a). Marlatt's model holds that addiction is a habit that can be altered through active behavioral and cognitive methods. Most central to his theorizing, however, is that without a growing sense of self-control over the habit, the individual is highly prone to return to using the substance. This fact has been borne out by the high relapse rates in the addictions regardless of treatment strategy.

Marlatt and Gordon (1980) addressed the lack of attention to the maintenance of abstinence by analyzing in depth the relapse process. First, the ex-addict's expectation of the immediate positive effects of using the substance combines with both the actual initial reinforcing sensations of consumption and social/situational pressures that encourage a "slip" (high-risk situations). Second, the individual experiences what Marlatt called the abstinence violation effect (AVE), a cognitive process that further increases the probability of a complete relapse. Guilt is central to the AVE ("I've engaged in a proscribed behavior.") as well as negative global self-attributions to reduce cognitive dissonance ("If I take a drink then I must be weak. Yeah, I'm a drunk".) (Curry, Marlatt, & Gordon, 1987). Marlatt uses the construct of self-efficacy—confidence in one's ability to engage in a particular behavior—in this case resisting the urge—as a predictor of abstinence and resistance to relapse in high-risk situations.

The relapse prevention model provides a strong conceptual framework for coping, or failures to cope, among individuals with PTSD and alcohol problems. Three areas are especially relevant to this population, as observed consistently in our clinical work:

1. The PTSD victim's high-risk situations are numerous. Beyond emotional states similar to original traumatic situations (e.g., loss, guilt, disappointment, confusion), the actual symptoms of PTSD (e.g., cognitive intrusions, sleep loss, social avoidance) are extremely high-risk cues.
2. Global attributions of low self-efficacy are prevalent, and resistance to high-risk situations such as those cited above is consequently quite low.
3. The PTSD patient has rather severe self-attributions regarding failure. For example, combat training compels the soldier to acquire the notion

that mistakes can be lethal; actual loss of life due to errors only strengthens that belief or expectancy. The AVE appears to be especially severe for the traumatized patient.

Abueg et al. (1989) conducted a two-group outcome study of relapse-prevention training as an adjunct to a full-spectrum inpatient hospitalization for PTSD. Forty-two well-diagnosed PTSD alcoholics received RPT, a 12-session treatment adapted to attend to the special needs of these patients; 42 patients did not receive the additional intervention. At a 6-month follow-up, 63% of the experimental RPT group had not returned to drinking, as compared to 41% of the controls who were abstinent. Modified RPT successfully forestalled a return to drinking. Relapse rates converged at 9-month follow-ups (44% of experimental groups versus 38% of controls abstinent), but the treated group showed a significantly lower degree of relapse, as measured by self-reported number of drinks consumed.

Modified Relapse-Prevention Training for PTSD Substance Abusers. Given the comorbidity of PTSD and alcoholism and the fact that the high-risk situations or stimuli for drinking behaviors are generalizations or representations of traumatic experiences, successful intervention must necessarily include identification and recognition of these high-risk profiles by the patient. The identification and exploration of these high-risk or trauma experiences is often best accomplished in a group designed for this purpose (i.e., a "trauma focus group"). In the program described here, the formal relapse-prevention groups are conducted concurrent with or after the patients have completed their focus group or DTE; such timing provides the foundation for identifying unique high-risk areas. This focus work is built on and extended in the relapse-prevention groups as each member's "road to relapse" is explored in depth. The self-knowledge gained in working on trauma experiences from their past is an important first step in the prevention of relapse in this population.

The modified relapse-prevention training takes place in 8-12 sessions. In keeping with the social learning model, these sessions include didactic and experiential components of role play and imagery as the primary methods of teaching. Ongoing assessment in the form of both process and outcome measures is also conducted throughout the period of intervention and as follow-up after its completion. One relapse prevention treatment manual is available specifically for Vietnam veterans with the dual diagnosis (Abueg & Kriegler, 1988).

After the provision of a statement of the purpose, goals, and method of the group, the initial session continues with an exploration of the members' expectations, both of drinking and of failure (i.e., their attributions and personal definitions of relapse). A didactic segment is repeated on the

long- vs. the short-term consequences of alcohol consumption. In sessions 2 and 3 this is followed by an initial assessment of each member's potential high-risk situations based on history and their own expectations. This is accomplished through group discussion of trauma-related issues and experiences from the past through imagery of their first "failure" experience, a discussion of those experiences and their emotional responses to these experiences, and written assignments. The Annis Situational Confidence Questionnaire (SCQ-39) is especially useful as a springboard for identifying particular areas of low self-efficacy to resist the urge to drink (Annis, 1985).

Based on the information gathered in these sessions, each member's "high-risk profile" and their potential "roads to relapse" are mapped out or defined. The following session is focused on the development of stimulus-control strategies—that is, skills that will help to reduce the patient's opportunity to drink. Such opportunities include the development of new or alternative social support networks or cognitive techniques to manage negative or high-risk emotions identified for each patient. Extensive role play and the use of relaxation and imagery (visualization) techniques are employed during this session. Continued problem solving of daily high-risk situations is discussed in sessions 5 and 6.

In these sessions, stimulus-control and cognitive techniques including problem solving and thought stopping are emphasized. Two sessions are devoted to an additional technique based upon the cue reactivity literature, alluded to earlier in this chapter. If alcohol- or drug-related cues evoke less psychophysiological and cognitive urges, then relapse risk would be presumably lowered. Subjective reports suggest that this may be the most memorable aspect of modified relapse-prevention training for PTSD alcoholics.

Patients are asked to picture the "relapse fantasy" in imagination up to the point of alcohol or drug use without letting the substance use occur. After obtaining two scenes per patient, positive coping imagery is employed to "turn the drinking scene around," thus strengthening alternative coping responses. These scenes are often quite revealing and provide substantive core themes to be used for later drink-refusal role playing or further problem solving.

The two sessions to follow (7 and 8) are devoted to drink-refusal training. This involves using visualization techniques in which the group members imagine themselves in an actual high-risk situation complete with feelings, sensations, and potential urge to drink. Then they are asked what type of response they would provide to an offer of a drink in the context of the situation they had just visualized. The various responses are discussed in terms of their probability for success, and alternatives are generated. Three types of refusals are highlighted: aggressive, assertive, and

passive refusals. The potential difficulties encountered when using the first and third types of refusal are highlighted. Once each member has produced an assertive drink-refusal strategy appropriate to his or her situation, the entire sequence (entering a high-risk situation, being offered a drink, and using an assertive drink refusal strategy) is enacted through role play. In the following session, drink-refusal training continues. However, at this point the learning involves in vivo exposure to actual drink stimuli. That is, patients are asked to participate in a reenactment of their imagined high-risk situation through role play involving an actual refusal of their drink of choice.

The following session involves preparation for coping with actual relapse through a discussion of the "abstinence violation effect" (AVE), the reaction they will have when they take their first drink after not drinking for some period of time. Coping with the guilt this behavior induces and working on the negative attributions or labeling that may follow is the focus of this work. If patients react by assigning global, internal, stable attributions about this behavior (e.g., "See, I am a drunk. I can't do anything right. I might as well keep on drinking since there really is no hope," etc.), then the AVE will be greater and the potential for a full-blown relapse is also greater. If patients are able to assign specific, external, unstable attributions to this behavior (i.e., to identify the high-risk situational or affective characteristics surrounding their behavior), and to generate coping strategies to alter the course of their behavior, then the relapse becomes a learning experience rather than a failure experience, and feelings of self-efficacy can be restored or maintained. The final two to three sessions involve the establishment of a "buddy system," final evaluation of skills, and arrangements for follow-up with the patient.

SUMMARY AND FUTURE DIRECTIONS

We have learned much about the complexity of PTSD over the course of the past decade. Our growing base of information includes the knowledge that chronic PTSD frequently co-occurs with substance abuse. Unfortunately, clinical experience has shown that PTSD and substance abuse comorbidities are especially difficult and challenging to treat. In this chapter, we have presented the conceptual basis and operational components of a behavioral multidimensional stage model for treating the PTSD substance abuser.

Research and clinical practice need to answer many basic questions regarding the efficacy and utility of behavioral stage interventions for treating PTSD substance abusers. Among the many important questions

that should be addressed are: (a) What is the efficacy of this intervention as measured by changes in PTSD symptomatology, alcohol abuse, and other important psychosocial outcomes? (b) Which components and stages of the model contribute to treatment outcome? (c) What is the relationship between important client characteristics (e.g., level of impairment, self-efficacy, and expectations of treatment) and outcome? (d) To what extent does this intervention generalize to PTSD substance-abusing victims of other types of extreme events (e.g., violent crime, sexual assault, natural or technological disasters) and what modifications should be made to the treatment protocol for various populations of trauma survivors? (e) To what extent is this intervention effective for individuals with PTSD who abuse other substances besides alcohol (e.g., illicit opioids and cocaine)? (f) To what extent can this intervention be implemented in other settings, such as community-based outpatient treatment programs? Future progress in successfully treating individuals with PTSD and substance abuse is linked to our ability to answer these and other questions about the interventions that we design for this complex comorbidity.

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